

ABSTRACT

TITLE: ORTHOGONAL VERSUS IMAGE GUIDED BRACHYTHERAPY IN CARCINOMA CERVIX: A COMPARITIVE DOSIMETRIC STUDY BASED ON THE RESPONSE TO EXTERNAL BEAM RADIATION

AIM

To compare conventional point A based brachytherapy planning and conformal planning in patients with differential response to EBRT and to analyse if Point A based planning is non-inferior to IGBT.

OBJECTIVES

Primary Objective:

To compare and analyse the variations in dose to target volume and OAR in orthogonal ICRU 38 recommendation based planning versus CT based volumetric planning in patients with differential response to EBRT and to identify the subgroup of patients in whom point A based planning may be non-inferior to IGBT.

Secondary Objective:

To identify the subgroup in which IGBT offers maximal benefit in terms of Target coverage and therapeutic ratio.

MATERIALS AND METHOD

STUDY DESIGN:Prospective Dosimetric study

TYPE OF STUDY:Case series

STUDY PERIOD:March 2017-August 2017

NO OF PATIENTS:40(20 in Group A & 20 in Group B)

40 patients with carcinoma of the uterine cervix who underwent EBRT with or without chemotherapy were stratified to Group A (No residue) or Group B (Residual disease) based on the response to EBRT. At the time of first intracavitary application, both orthogonal point A based planning and CT based volumetric planning were done and variations in the dose to the Target volume(D90/D100/V100 & Dose to point A) and OAR(D0.1/1/2cc & ICRU Bladder and rectal points)were compared..

RESULTS:

In Group A,target coverage was achievable withj conventional planning methods ,however with image guided brachytherapy the dose to organ at risk could be reduced.In Group B,for adequate target coverage ,combined intracavitary and interstitial needle techniques were necessary and only image guided brachytherapy

without needles could not achieve this target coverage, thus, it was the choice of technique which was important in this group.

CONCLUSION:

From our observation, IGBT is essentially important to treat a larger target volume, in patients who have residue after initial chemo radiation for adequate target coverage, provided the choice of technique such as combined intracavitary and interstitial brachytherapy were utilized. IGBT also improves the therapeutic ratio in patients who do not have a central residue. In patients with good response after external beam radiation to pelvis, IGBT could be used to reduce the dose to the organ at risk thus improving the therapeutic ratio, however without much difference with respect to target coverage in comparison to orthogonal planning.